

SOKOLOV, V.A.; TOLSTOY, N.A.

Thermoluminescence and thermally stimulated current from TlCl single  
crystals. Opt. i spektr. 19 no.1:97-101 J1 '65.

(MIRA 18:8)

L 61824-65 EWT(1)/EWT(m)/EWG(m)/T/EWP(t)/EEC(b)-2/EWP(b) P1-4 IJP(c)

RDW/JB/GG

ACCESSION NR: AP5017908

UR/0051/65/019/001/0142/0143

548.0:535

27

AUTHOR: Adrianova, I. I.; Dreyden, G. V.; Dubenskiy, K. K.; Popov, Yu. V.; Sokolov, V. A.

26

8

TITLE: Electro-optical effect in ZnSe crystals

SOURCE: Optika i spektroskopiya, v. 19, no. 1, 1965, 142-143

TOPIC TAGS: electrooptical effect, zinc selenide, synthetic crystal

ABSTRACT: The authors report that they observed the electro-optical effect in ZnSe crystals synthetically grown from a melt under pressure (Optiko-mekhanich. promyshl. no. 5, 29, 1962). A noticeable electro-optical effect was previously observed only in CuCl and ZnS crystals, which are not encountered in nature in large sizes and which are difficult to grow artificially. An x-ray structural analysis of the grown crystals has shown that they have a cubic structure with the (110) plane perpendicular as a rule to the growth axis. Photographs illustrating the behavior of the crystals in an electric field are presented. Since the crystals obtained so far were not optically isotropic, the electro-optical coefficients were not determined. It can be assumed, however, that these coefficients are not lower than in ZnS. An optical transmission test showed these crystals to be transparent at wave-

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lengths exceeding  $0.5\mu$ . The electro-optical properties make ZnSe a promising material for use in optical modulators and light shutters. "The authors thank V. A. Shamburov for consultations." Orig. art. has: 2 figures. [02]

ASSOCIATION: none

SUBMITTED: 26Dec64

ENCL: 00

SUB CODE: 550P

NO REF SCV: 003

OTHER: 001

ATD PRESS: 4059

*gfb*  
Card 2/2

SUNDOV, V.A.; TOISTOI, N.A.

Mechanism underlying the induced luminescence (and photoconductivity)  
of thallium chloride. Izv. AN SSSR. Ser.fiz. 29 no.3:472-474 Mr '65.  
(MIRA 18:4)

L 26481-66 EWT(1) IJP(c)

ACC INR: APG013069

SOURCE CODE: UR/0048/66/030/004/0633/0636

AUTHOR: Sokolov, V.A.; Vol'kenshteyn, F.F.; Brik, O.G.; Kondratenko, M.B. 30  
B

ORG: None

TITLE: Concerning the role of radical-recombination processes in candoluminescence  
/Report, Fourteenth Conference on Luminescence held in Riga 16-23 September 1965/

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 30, no. 4, 1966, 633-636

TOPIC TAGS: recombination luminescence, chemiluminescence, candoluminescence

ABSTRACT: Although <sup>3</sup>candoluminescence - luminescence under the influence of a flame - has been questioned for many years, the authors assert that the existence of this phenomenon has definitely been proved. The mechanism of candoluminescence was hypothetically developed by one of the authors (F.F.Vol'kenshtein, Elektronnaya teoriya kataliza na poluprovodnikakh, Fizmatgiz, Moscow 1960) on the basis of the electronic theory of catalysis and chemisorption on semiconductors and has been discussed and described in other publications by F.F.Vol'kenshtein et al. According to this mechanism excitation occurs at the expense of the energy released incident to recombination of free atoms and radicals in the flame on the surface of the phosphor. In the present paper there are adduced the inferences based on the radical-recombination theory as regards the influence of extraneous gaseous impurities on the intensity of cando-

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L 26481-66

ACC NR: AP6013069

luminescence and there are described the results of attempts at experimental verification of the predictions. The inert gas employed in the main experiments was nitrogen and the phosphor was  $\text{ZnS} \cdot \text{CdS} : \text{Cu}$ . A figure gives curves characterizing the variation of the luminescence intensity of the phosphor with the nitrogen concentration at different temperatures. Another figures shows analogous curves characterizing the influence of  $\text{CO}$  and  $\text{O}_2$ . Comparative experiments to evaluate the recombination coefficient were carried out with non-luminescing  $\text{CuO}$ . On the basis of general analysis of the data it is concluded that radical-recombination processes play a significant role in excitation of low-temperature luminescence (which, it is asserted, is true luminescence according to the Vavilov-Wiedemann criterion) but also in excitation of high-temperature candoluminescence, which is a special form of equilibrium emission that is not true luminescence. Orig. art. has: 2 formulas and 3 figures.

SUB CODE: 20/

SUBM DATE: 00/

ORIG REF: 007/

OTH REF: 001

Card 2/2

RB

SOKOLOV, V. A.

Sokolov, V. A. History of black body radiation law. (On the investigations of V. A. Michelson)  
P. 275

SO: Uspekhi Achievements in Physical Sciences, 43, No. 2 (Feb. 1951)

Soviet Union

PHASE I BOOK EXPLOITATION SOV/4563

Metody polucheniya i izmereniya radioaktivnykh preparatov; sbornik statey (Methods for the Production and Measurement of Radioactive Preparations; Collection of Articles) Moscow, Atomizdat, 1960. 307 p. Errata slip inserted. 6,000 copies printed.

General Ed.: Valeriy Viktorovich Bochkarev; Ed.: M.A. Saguro;  
Tech. Ed.: N.A. Vlasova.

PURPOSE: This collection of articles is intended for scientific and technical personnel working in the production of radioactive isotopes.

COVERAGE: The collection contains original studies on methods of obtaining and measuring radioactive preparations. According to the foreword, the articles contain new data, and are of theoretical or practical interest to the extent that they discuss methods or give process information. In addition to several survey articles the collection contains discussions on the production of radioactive isotopes and inorganic radioactive preparations, including a number of carrier-free isotopes and several colloidal and other therapeutic preparations. Also discussed are methods for prepar-

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Methods for the Production (Cont.)

SOV/4563

ing a number of tagged organic compounds, problems in the analysis of tagged organic compounds, the absolute and relative measurement of activity, and the radiometric analysis of preparations. New instruments and equipment are described and instructions concerning measurement methods and technique are included. V.I. Levin, Candidate of Chemical Sciences, V.P. Shishkov, Candidate of Technical Sciences, I.N. Bukharov, Candidate of Biological Sciences, and V.I. Shostak, Candidate of Chemical Sciences, are mentioned as having helped directly in the selection and preparation of the material for publication. References accompany each article.

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PART I. PRODUCTION OF INORGANIC RADIOACTIVE PREPARATIONS

Levin, V.I. Production of Radioactive Isotopes and Compounds 9

Levin, V.I. Production of Radioactive Elements - Fission Products 14

~~Card 2/8~~

SOKOLOV, V. A. (Acad of Medical Scis, USSR)

"Investigation of Isotopic Exchange in the System  $CS_2$  -  $S^{35}$  for Obtaining Tagged Carbon Disulfide"

Isotopes and Radiation in Chemistry, Collection of papers of  
2nd All-Union Sci. Tech. Conf. on Use of Radioactive and Stable Isotopes and  
Radiation in National Economy and Science, Moscow, Izd-vo AN SSSR, 1958, 380pp.

This volume published the reports of the Chemistry Section of the  
2nd AU Sci Tech Conf on Use of Radioactive and Stable Isotopes and Radiation  
in Science and the National Economy, sponsored by Acad Sci USSR and Main  
Admin for Utilization of Atomic Energy under Council of Ministers USSR  
Moscow 4-12 Apr 1957.

PHASE I BOOK EXPLOITATION

SOV/4971

Sokolov, V. A., Ye. A. Tikhomirova, and N. A. Kosolapova

Radioaktivnyy izotop sery  $S^{35}$  (Radioactive Sulfur Isotope  $S^{35}$ )  
Moscow, Atomizdat, 1960. 25 p. Errata slip inserted.  
5,000 copies printed.

Ed.: Z. D. Andreyenko; Tech. Ed.: Ye. I. Mazel'.

PURPOSE: This brochure is intended for scientific personnel working with radio isotopes and for the general reader interested in the subject.

COVERAGE: The author discusses, in a popular form, the physical properties and methods of preparing the radioactive isotope  $S^{35}$ , as well as its various uses in scientific research, medicine, and industry. Two tables of data, one diagram, and one photograph are included. No personalities are mentioned. There are 17 references, all Soviet.

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PHASE I BOOK EXPLOITATION

SOV/5142

Sokolov, V.A., and I.A. Kulagina

Radioaktivnyy izotop kal'tsiya -  $\text{Ca}^{45}$  (Radioactive Calcium Isotope -  $\text{Ca}^{45}$ )  
Moscow, Atomizdat, 1960. 17 p. 6,000 copies printed.

Ed.: G.M. Pchelintseva; Tech. Ed.: N.A. Vlasova.

**PURPOSE:** This booklet is intended for readers with some previous knowledge of radiochemistry and an interest in the applications of radioactive isotopes.

**COVERAGE:** The booklet deals with the radioactive properties of isotopes, production methods for  $\text{Ca}^{45}$ , and synthesis of compounds tagged with  $\text{Ca}^{45}$ . Examples of  $\text{Ca}^{45}$  application in science and technology are cited. Principles of accident prevention in work with this isotope are given. Seven preparations containing  $\text{Ca}^{45}$  that are produced in the Soviet Union are listed in tabular form along with their characteristics and price. No personalities are mentioned. There are 10 references, all Soviet.

**TABLE OF CONTENTS:**

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L 18992-63  
IJP(C) Pr-4

EPF(c)/EWT(1)/EWP(q)/EWT(m)/BDS  
GG/RM/WW/JD/MAY/JFW/JG

AFFTC/ASD/ESD-77

S/2935/62/000/000/0179/0192

74  
13

ACCESSION NR: AT3002452

AUTHOR: Vol'kenshteyn, F. F.; Gorban', A. N.; Sokolov, V. A.,

TITLE: Processes of recombination of free radicals on a semiconductor surface  
and their role in luminescence [Conference on Surface Properties of Semiconductors,  
Institute of Electrochemistry, AN SSSR, Moscow, 5-6 June, 1961]

SOURCE: Poverkhnostnyye svoystva poluprovodnikov. Moscow, Izd-vo AN SSSR,  
1962, 179-192

TOPIC TAGS: semiconductor, semiconductor-surface characteristics,  
luminescence, surface recombination

ABSTRACT: On the basis of the electronic theory of chemosorption and catalysis,  
the radical-recombination mechanism of luminescence is examined, as well as  
some consequences ensuing from that mechanism. A theoretical and experimen-  
tal investigation is reported of the effect of an external transverse electric field  
upon the intensity of candoluminescence. Luminescence is considered as  
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ACCESSION NR: AT3002452

consisting of two steps: ionization and neutralization of an activator atom; the accompanying phenomena are explained and pictorially represented. A new formula describing the intensity of luminescence is developed, and the effect of the Fermi level on the intensity is investigated. The effect of the electric field on cathodoluminescence was studied in a special device on a ZnS·CdS copper-activated phosphor placed in a low-temperature lighting-gas flame. Potentials -2kv and +2kv were applied to the electrodes producing the electric field in the phosphor zone, and the variation in the luminescence intensity was measured. The experiments are interpreted as corroborating the probability of the radical-recombination mechanism. Orig. art. has: 7 figures and 26 formulas.

ASSOCIATION: Institut khimicheskoy fiziki AN SSSR (Institute of Chemical Physics, AN SSSR); Institut fizicheskoy khimii AN SSSR (Institute of Physical Chemistry, AN SSSR)

SUBMITTED: 00

DATE ACQ: 15May63

ENCL: 00

SUB CODE: PH

NO REF SOV: 009

OTHER: 002

Card 2/2

SOKOLOV, V.A.; GORBAN', A.N.; NAZIMOVA, N.A.

"Selectivity" of the thermal radiation of CaO and MgO. Opt.  
i spektr. 11 no.2:273-274 Ag '61. (MIRA 14:8)  
(Calcium oxide) (Magnesium oxide) (Radiation)

SOKOLOV, V.A.; KONDRAT'YEVA, T.I.

Preparation of medical applications with various radioactive  
isotopes on the basis of ion exchanging materials. Med.rad.  
no.1:28-32 '62. (MIRA 15:1)  
(ION EXCHANGING SUBSTANCES) (RADIOISOTOPES—THERAPEUTIC USE)



SOKOLOV, Viktor Aleksandrovich; KARLOVA, T.V., red.; POPOVA,  
S.M., tekhn. red.

[ $I^{132}$ , the short-lived iodine isotope] Kороткоживущий  
изотоп йода -  $I^{132}$ . Moskva, Gosatomizdat, 1963. 21 p.  
(MIRA 16:10)

(Iodine isotopes)

L 1596-66 ENT(m)/T

AM4048142

BOOK EXPLOITATION

UR/

661.183: 66.071.7

32  
B+1

Sokolov, Vasilii Andreyevich; Torocheshnikov, Nikolay Semenovich; Kel'tsev, Nikolay Vladimirovich

Molecular sieves and their use (Molekulyarnyye, sita i ikh primeneniye) Moscow, Izd-vo "Khimiya", 1964. 0155p. illus., biblio. 2,300 copies printed.

TOPIC TAGS: petrochemistry, chemical separation, hydrocarbon, analytic chemistry, molecular sieve, zeolite, crystal

PURPOSE AND COVERAGE: The book is a presentation both on the properties and application of molecular sieves in purification and separation of gaseous and liquid mixtures. The structures of natural and artificial zeolites used as molecular sieves are described. Included are also methods for their practical use in various branches of technology for drying, purification and separation of hydrocarbons. Research results on membranes and films made from some materials and used in capacity of molecular sieves are presented. The book is intended for engineers and technicians in oil, gas and petrochemical industry.

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AM4048142

"APPROVED FOR RELEASE: 08/25/2000

CIA-RDP86-00513R001652020017-7"

TABLE OF CONTENTS (abridged):

- Ch. I. Porous crystals and their properties as molecular sieves - - 36
- Ch. II. Use of molecular sieves for drying and purification of gases and liquids - - 36
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- Ch. IV. Use of zeolites in chemical synthesis - - 126
- Ch. V. Use of molecular sieves in analytical chemistry - - 133
- Ch. VI. Molecular sieves of membrane and film shape

SUB CODE: NP, GC

NR REF SOV: 063

SUBMITTED: 11Mar64

OTHER: 069

SOKOLOV, V.A.

~~SOROKIN~~, V.I., doktor tekhn. nauk; SOKOLOV, V.A., inzh.; SARYCHEV, I.I.,  
kand. tekhn. nauk, red.; ~~GABDUKHINA~~, L.A., tekhn. red.

[Using pressure in the molding of products from stiff concrete mixes]  
Primenenie prigruski pri formirovani izdelii iz zhestkikh beton-  
nykh smesei. Moskva, Gos. izd-vo lit-ry po stroit. materialam,  
1957. 24 p. (MIRA 11:8)

1. Gosudarstvennyy Vsesoyuznyy nauchno-issledovatel'skiy institut  
zhelezobetonnykh izdeliy i nerudnykh materialov.  
(Precast concrete)

*Sokolov, V.*

GUTSKOV, Ye.; inzh.; SOKOLOV, V., inzh.

Hollow-forming device with an attached vibrator. Stroi.mat. 3  
no.11:26-27 N '57. (MIRA 10:12)  
(Concrete slabs) (Vibrators)

SOKOLOV, V. A.: Master Tech Sci (diss) -- "The technological principles and methods of forming large, hollow wall blocks". Moscow, 1958. 18 pp (Acad Construction and Architecture USSR, Sci Res Inst of New Construction Materials, Parts, and Equipment of Buildings), 220 copies (KL, No 1, 1959, 121)

AUTHOR: Sokolov, V.A., Engineer. SOV/97/58/2/9/16

TITLE: The Function of Anchoring Shields during Casting of Products from Stiff Concrete Mixes. (Rol'prigruzochnykh shchitov v formovke izdeliy iz zhestkikh betonnykh smesey).

PERIODICAL: Beton i Zhelezobeton, 1958 Nr 2, pp 71-72.

ABSTRACT: This shield provides an anchoring base for an inflatable rubber pillow which, by means of expansion, forces down the top of the steel form in which the concrete product is thereby consolidated. This method is preferable to that of vibration inasmuch as the process is far quicker, the consolidation more effective and the strength of the concrete product much higher. Figure 1 shows a plan of the consolidation using the above-mentioned devices, and Figure 2 illustrates the consolidation of the concrete carried out in the same way during casting of whole floor slabs. The VNIIZhelezobeton together with factory Nr 6 of Glavmoszhelezobeton carried out tests on the degree of consolidation using various loads and the above-described devices,

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SOV/97/58/2/9/16

The Function of Anchoring Shields during Casting of Products from Stiff Concrete Mixes.

as defined by N.B. Dardik in an article entitled "Construction and Anchoring Devices and the principle on which they operate", published in "Concrete and Reinforced Concrete, 1957, Nr 8. The Laboratories for silica and light concrete products of the Institute of Building Technology of the Academy of Building and Architecture of USSR established that the optimal weight during casting of light concrete products should be 50-75G/cm<sup>2</sup>. In the factory Nr 4 of Glavmoszhelezabeton, tests were carried out using loading of 100G/cm<sup>2</sup>, but for this loading the concrete mix must be much harder. It was found that loading of 200G/cm<sup>2</sup> was quite effective. The use of these implements for consolidation speeds up the casting time, increases the strength of the concrete product and reduces the likelihood of cracks in whole concrete products. There are two figures.

1. Concrete--Casting    2. Rubber--Applications    3. Concrete--Preparation  
4. Concrete--Physical properties

Card 2/2

RABINOVICH, David L'vovich; SOKOLOV, Vladimir Aleksandrovich; SOROKER,  
V.I., red.; KIRYUSHIN, V.I., otv. za vypusk; SUKHAREVA, R.A.,  
tekhn.red.

[Technology of the immediate stripping of forms from precast  
reinforced concrete elements and details] Tekhnologiya nemedlennoi  
raspalubki sbornyykh zhelezobetonnykh konstruktsii i detalei. Moskva,  
1959. 54 p. (Moskovskii dom nauchno-tekhnicheskoi propagandy. Pere-  
dovoi opyt proizvodstva. Seriya: Stroitel'stvo, no.7).  
(MIRA 13:11)

(Concrete construction--Formwork)



SGV/97-59-3-2/15

AUTHORS: Soroker, V. I., Doctor of Technical Sciences, Spivak, N.Ya.,  
Candidate of Technical Sciences and Sokolov, V. A., Engineer

TITLE: Casting of Hollow and Multiribbed Thin Reinforced Concrete  
Panels in "Cassette" Forms

PERIODICAL: Beton i zhelezobeton, 1959, Nr 3, pp 100-103 (USSR)

ABSTRACT: "Cassette" forms have advantages over stand and conveyor systems of casting in that the product has a straight, smooth face ready for the application of paint; they allow more efficient curing, which results in acceleration of hardening of the concrete and in a much lower consumption of steel for reinforcement. Their disadvantage is the impracticability of using vibration for consolidation. For effective use to be made of these forms the problem of vibration as well as the casting of hollow and multiribbed thin panels will have to be solved. ASIA USSR, NIIZhelezobeton and Giprostroyindustriya have worked on the programme of consolidation necessary when the "cassette" form is used. Testing of methods of vibrating these forms is proceeding in various factories: for example, Nr 12

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SOV/90-09-5-2/15

Casting of Hollow and Multiribbed Thin Reinforced Concrete Panels  
in "Cassette" Forms

Glaucosprometnoymaterial, where "cassette" forms are being used in conjunction with a vibrating diaphragm (dividing wall) (Fig 1). Consolidation by vibration results in harder concrete, which allows a saving of cement, as shown in the table on p 100. The Scientific Research Institute for Technology and Organization of Production, and the Institute for Housing elaborated a "cassette" form for ribbed products, by consolidation of concrete mixes using the reinforcement as a means of vibration. Effective consolidation in such a case depends on the type of reinforcement. Unfortunately these methods do not allow the use of moderately stiff concrete mixes, or of forming slabs thinner than 4 cm. The authors of this article worked out technological details and methods of casting hollow and thin ribbed slabs in "cassette" forms (panels designed by G. F. Kuznetsov, T.A. Antipov and N. V. Morozov of the Institute for Physics of Building and Enclosing Structures of the Academy of Building and Architecture

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SOV/97-59-3-2/15

Casting of Hollow and Multiribbed Thin Reinforced Concrete Panels  
in "Cassette" Forms

of the USSR (Institut stroitel'noy fiziki i ograbdayu-  
shchikh konstruktsey ASiA SSSR). On the basis of experi-  
ments carried out by NIIZhelezobeton two methods of  
production were worked out using the "cassette" form  
vertically. The first method uses a set of inserts forming  
hollows on a vibrating cross-beam; the second uses "float-  
ing" vibrating caissons. The experimental hollow panel is  
illustrated in Fig 2. Figs 3 and 4 illustrate a set of  
hollow-forming inserts joined to a vibrating cross-beam.  
Stiff concrete mix with a slump test value of 2 cm can be  
used for casting concrete walls 12 - 20 mm thick. This is  
possible as a result of intensive internal vibration applied  
through the hollow-forming tubes. The distribution of  
amplitudes of vibration along the length of the hollow-  
forming tube is shown in Fig 5. Fig 6 shows jacks used for  
removal of tubes from the concrete. Dismantleable forms  
used in Factory No 12 proved to be satisfactory. The vi-  
bration of the hollow-forming tubes has an amplitude of at  
least 0.35 mm and frequency of 2800 vibrations per minute.

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SOV/97-59-3-2/15

Casting of Hollow and Multiribbed Thin Reinforced Concrete Panels in "Cassette" Forms

Ribbed panels are cast in the same form as hollow slabs, the metal partitions being replaced by a special rib-forming unit with vibrator. Fig 7 shows such a ribbed slab of 5 m x 1.4 m. The special inserts, which contain the vibrators, rest on rubber pads which do not interfere with the vibration, allowing a frequency of 2800 vibrations per minute and an amplitude of at least 0.35 mm. The technological process of vertical casting of these slabs is described in detail. Tests showed that during casting the dividing wall vibrates, due to resonance, with an amplitude 10-12% smaller than the amplitude of the insert, and this vibration is sufficient to consolidate concrete in adjoining areas. The method of casting multiribbed panels in vertical forms is shown in Fig 8. Use of this form and method of casting allows manufacture not only of thin flat units but also of ribbed and hollow wall units 12 mm thick. A high-quality surface is achieved which is not obtainable by other casting processes. There are 8 figures and 1 table.

Card 4/4

STASEVICH, Aleksey Mikhaylovich, inzh.; SOKOLOV, Vladimir Aleksandrovich,  
kand.tekhn.nauk; MERTUMYAN, A.K., nauchnyy red.; GLEZAROVA,  
I.L., red.izd-va; RYAZANOV, P.Ye., tekhn.red.; HUDAKOVA, N.I.,  
tekhn.red.

[Making reinforced-concrete elements of large-panel houses in  
vertical molds; practices of the Khoroshevo branch of the Moscow  
Housing Construction Combine No.1] Izgotovlenie zhelezobetonnykh  
detalei krupnopanel'nykh domov v vertikal'nykh kassetakh; opyt  
Khoroshevskogo filiala Moskovskogo domostroitel'nogo kombinata  
No.1. Moskva, Gos.izd-vo lit-ry po stroit., arkhitekt. i stroit.  
materialam, 1960. 72 p. (MIRA 13:11)  
(Moscow--Precast concrete construction)

SOKOLOV, Vladimir Aleksandrovich, kand. tekhn. nauk, starshiy nauchnyy  
sotr.; POLUBNEVA, V.I., inzh., red.;

[Manufacture of parts for series I-464 apartment houses] Izgotovlenie  
detalei dlia domov serii I-464; opyt zavodov Glavmospromstroimaterialov.  
Moskva, Gos. izd-vo lit-ry po stroit., arkhitekt. i stroit. materialam,  
1961. 52 p. (MIRA 14:11)

1. Akademiya stroitel'stva i arkhitektury SSSR. Institut organizatsii,  
mekhanizatsii tekhnicheskoy pomoshchi stroitel'stvu. Byuro tekhnicheskoy  
informatsii. 2. Nauchno-issledovatel'skiy institut zhelezobetonnykh izde-  
liy i nerudnykh materialov Glavnogo upravleniya promyshlennosti stro-  
itel'nykh materialov i stroitel'nykh detaley (for Sokolov).  
(Apartment houses) (Precast concrete)

BALAT'YEV, Pavel Konstantinovich, kand. tekhn. nauk; SOKOLOV, Vladimir Aleksandrovich, kand. tekhn. nauk; POLUBNEVA, V.I., inzh., red.

[Repeated vibration in the production of reinforced concrete panels in formworks; practices of factory No.12 of the Main Administration of the Building Materials Industry, attached to the Executive Committee of the Moscow City Council of Workers' Deputies] Povtornoie vibrirovaniye pri kassetnom proizvodstve zhelezobetonnykh panelei; opyt zavoda n.12 Glavmospromstroimaterialov. Moskva, Gosstroizdat, 1962. 22 p. (MIRA 17:6)

1. Akademiya stroitel'stva i arkhitektury SSSR. Nauchno-issledovatel'skiy institut organizatsii, mekhanizatsii i tekhnicheskoy pomoshchi stroitel'stvu. 2. Zamestitel' direktora po nauchnoy chasti Gosudarstvennogo nauchno-issledovatel'skogo instituta zhelezobetonnykh izdeliy, stroitel'nykh i nerudnykh materialov (for Balat'yev). 3. Starshiy nauchnyy sotrudnik Gosudarstvennogo nauchno-issledovatel'skogo instituta zhelezobetonnykh izdeliy, stroitel'nykh i nerudnykh materialov (for Sokolov).

SOKOLOV, V.A., inzh.

New standards for various types of heavy concrete and their fillers  
for use in shipbuilding. Sudostroenie 30 no.2:47-48 F '64.  
(MIRA 17:4)



1ST AND 2ND ORDERS																										3RD AND 4TH ORDERS																									
PROCESSES AND PROPERTIES INDEX																																																			
<p>BC</p> <p>Equilibrium and formation of complexes in the system <math>\text{H}_2\text{O}-\text{NH}_4\text{NO}_3-(\text{NH}_4)_2\text{SO}_4</math>. V. A. Sokolov (Bull. Acad. Sci. U.S.S.R., 1958, Ser. Chim., 123-133).—Solubility data have been obtained from 70° to -22.4°. The existence of <math>(\text{NH}_4)_2\text{SO}_4 \cdot 3\text{NH}_4\text{NO}_3</math>, <math>(\text{NH}_4)_2\text{SO}_4 \cdot 2\text{NH}_4\text{NO}_3</math>, and <math>(\text{NH}_4)_2\text{SO}_4 \cdot \text{NH}_4\text{NO}_3</math> is confirmed by thermal and X-ray analysis. The regions of stability of the double salts have been determined. E. S. H.</p>																																																			
A.S.B.-S.L.A. METALLURGICAL LITERATURE CLASSIFICATION																																																			
1ST AND 2ND ORDERS																										3RD AND 4TH ORDERS																									
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BC

7.1

Equilibria in the system carbamide-ammonium nitrate-water. V. A. SOKOLOV (J. Gen. Chem. Russ., 1939, 9, 753-758).—Phase diagrams are given for the interval  $-26.5^{\circ}$  to  $25^{\circ}$ .  $\text{CO}(\text{NH}_2)_2$  and  $\text{NH}_4\text{NO}_3$  are mutually sol., and yield two series of solid solutions.  $\beta$ -Rhombic  $\text{NH}_4\text{NO}_3$  does not dissolve  $\text{CO}(\text{NH}_2)_2$ . R. T.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

1. GROUP

2. SUBGROUP

3. DIVISION

4. SECTION

5. TOPIC

6. AUTHOR

7. TITLE

8. JOURNAL

9. YEAR

10. VOLUME

11. PAGE

12. ABSTRACT

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14. CROSS-REFERENCE

15. OTHER

16. REMARKS

17. COMMENTS

18. NOTES

19. REFERENCES

20. SUMMARY

21. CONCLUSIONS

22. RECOMMENDATIONS

23. ACTION

24. STATUS

25. DATE

26. BY

27. FOR

28. OF

29. TO

30. FROM

31. THROUGH

32. ACROSS

33. BEYOND

34. WITHIN

35. OUTSIDE

36. INSIDE

37. UNDER

38. OVER

39. ABOVE

40. BELOW

41. NEAR

42. FAR

43. CLOSE

44. Distant

45. NEARBY

46. REMOTE

47. ADJACENT

48. OPPOSITE

49. PROXIMATE

50. DISTANT

51. NEARBY

52. REMOTE

53. ADJACENT

54. OPPOSITE

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58. REMOTE

59. ADJACENT

60. OPPOSITE

61. PROXIMATE

62. DISTANT

63. NEARBY

64. REMOTE

65. ADJACENT

66. OPPOSITE

67. PROXIMATE

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83. ADJACENT

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88. REMOTE

89. ADJACENT

90. OPPOSITE

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92. DISTANT

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94. REMOTE

95. ADJACENT

96. OPPOSITE

97. PROXIMATE

98. DISTANT

99. NEARBY

100. REMOTE

1ST AND 2ND ORDERS										PROCESSING AND PROPERTY DATA										3RD AND 4TH ORDERS									
CH																				1									
<p>Mechanization of loading and unloading in chemical industries. I. G. Vol'skil and V. A. Sokolov. <i>J. Chem. Ind. (U. S. S. R.)</i> 10, No. 12, 14-19(1959).</p> <p>H. M. Leicester</p>																													
<p>ABO-31A METALLURGICAL LITERATURE CLASSIFICATION</p>																													
1ST AND 2ND ORDERS										3RD AND 4TH ORDERS										5TH AND 6TH ORDERS									

1ST AND 2ND ORDERS										3RD AND 4TH ORDERS									
<p><i>en</i></p> <p><b>HIGHER ORDER TRANSFORMATIONS OF UREA.</b> V. A. Sokolov.  <i>J. Gen. Chem. (U. S. S. R.)</i> 19, 165-71(1944).—Thermal            expansion of urea in temp. intervals from <math>-6^{\circ}</math> to <math>+5^{\circ}</math> and            from <math>25^{\circ}</math> to <math>37^{\circ}</math> was investigated. The expansion coeff.            of urea has anomalously high values between <math>-2^{\circ}</math> to <math>-4^{\circ}</math>            and around <math>33^{\circ}</math>; this fact indicates that a transformation            of higher order (modification of urea structure) takes place            in urea at those temps. The differential heating and cool-            ing curves disclosed the presence of the heat effect that            accompanied the transformation. Data are tabulated            and plotted. A. A. Podgorny</p>																			
<p>ASS-SLA METALLURGICAL LITERATURE CLASSIFICATION</p>																			
<p>FROM DIVISION</p>										<p>TO DIVISION</p>									
<p>SYNOPSIS</p>										<p>DETAILS</p>									

SOKOLOV, V. A.

Calorimeter for the determination of the true heat capacity and of latent heats at high temperatures. V. A. Sokolov (N. S. Kurnakov Inst. Gen. Inorg. Chem., Moscow). *Zhur. Tekh. Fiz.* 18, 813-22 (1948).—Description of an adiabatic calorimeter of low heat capacity (1.5 cal.), with the equality of the temp. of the calorimeter and the jacket maintained automatically with the aid of a max. photo-relay. Heat capacities and latent heats can be detd. with an accuracy of  $\pm 0.5\%$ . The reproducibility is illustrated by measurements of the heat capacity of  $\text{KNO}_3$  between 20 and 300°, showing a polymorphous transition point at 126.8°.

N. Thon

1ST AND 2ND ORDER										3RD AND 4TH ORDER									
PROCESSES AND PROPERTIES INDEX																			
<p><i>CA</i></p> <p>The shape of the solubility curve near a transition point of the solid. V. A. Gerasimov (Inst. Gen. Inorg. Chem., Acad. Sci. U.S.S.R., Moscow). <i>J. Phys. Chem. (U.S.S.R.)</i> 22, 683-6 (1968) (in Russian).—The 2 soly.-temp. curves corresponding to 2 phases of a substance cross at the transition temp. which, in the absence of solid soln., is identical with the transition temp. of the pure substance. In the instance of transitions of the 2nd order the kinks in the soly.-temp. curve may occur at temps. differing from the isotherm of the pure substance, also in the absence of solid soln., if foreign substances are present. This case was realized in the expts. by Polosin and Shakhparonov (<i>C.A.</i> 34, 12887). J. J. Bickerman</p>																			
<p>ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION</p>																			
<p>1ST ORDER</p>										<p>2ND ORDER</p>									
<p>1 2 3 4 5 6 7 8 9 10</p>										<p>11 12 13 14 15 16 17 18 19 20</p>									

PA 36/49T8

USSR/Chemistry - Platinum Compounds, Amino Sep 48  
Chemistry - Heat Capacity

"Heat Capacity of Dispersed Isomers of Platinum  
Diamino Chloride," Acad I. I. Chernyayev, V. A.  
Sokolov, N. Ye. Schmidt, G. S. Muraveyskaya, Inst  
Gen and Inorg Chem Imeni N. S. Kurnakov, Acad Sci  
USSR, 4 pp

"Dok. Ak. Nauk SSSR" Vol LXII, No 2

Studied heat capacities of cis- and trans- isomers  
of platinum diamino-dichloride. Expected heat capac-  
ity of Peyrone chloride to be greater than that of  
the chloride of Reiset's second base (the trans-  
isomer), for the temperature range between absolute  
36/49T8

USSR/Chemistry - Platinum Compounds, Sep 48  
Amino (Contd)

zero and temperature of isomerization. However,  
they were identical. Concludes that, for any  
temperature, difference in isobaric potentials of  
these substances, equal to difference of their total  
energy, is fully determined by the heating effect  
of the isomerization reaction. Submitted 13 Jul 48.

SOKOLOV, V. A.

36/49T8

CA

Thermodynamics of transformations of the second order.  
V. A. Sukolov and N. K. Minin. *Izv. Akad. Nauk  
Khim. Nauk, 1961, 1961-7(1961).* Phase transitions of the 2nd  
order can be regarded as nonvariant processes occurring  
under conditions of entropy equality of the coexisting phases,  
 $\Delta S = 0$  or monovariant processes occurring in a one-com-  
ponent system with 3 phases,  $\Delta S \neq 0$ . This appears to con-  
tradict the phase rule. Ba titanate is an example of anom-  
alous heat capacity having a smooth max. Such anomaly  
precludes the possibility of phase transition with small en-  
thalpy heat absorption which goes unobserved because of  
inherent expit. errors. The apparent contradiction between

the behavior of Ba titanate and phase rule is explicable by  
the existence of a parameter other than  $p$  and  $T$ , namely the  
elec. field of spontaneous polarization. Considering Ba  
titanate as a pseudobinary system, the relation between  
concn. of the pseudocomponents and temp. can be es-  
tablished by integrating the anomalous part of the heat  
capacity. M. Hosh



CA

2

Phase transitions of the second kind and the Ehrenfest equation. V. A. Sokolov (N.S. Kurnakov Inst. Gen. and Inorg. Chem., Acad. Sci. U.S.S.R., Moscow). *Doklady Akad. Nauk S.S.S.R.* 68, 901 (1979). The Keesom (C.A. 37, 3374)-Ehrenfest (C.A. 37, 3335) equation  $(dp/dT)_\lambda = \Delta C_p / T \Delta \alpha$  for the  $\lambda$ -point follows from the Clausius-Clapeyron equation if the transition of the 2nd kind is treated as a transition in a two-phase region, with the heat of transition  $\Delta H = \Delta C_{p,e} (dm/dT)$  (the subscript  $e$  denoting the excess effective heat capacity), and the vol. change  $\Delta v = \Delta \alpha (dm/dT)$ , the fractions of each phase being, resp.,  $m$  and  $(1 - m)$ , and  $\Delta \alpha$  being the anomalous part of the expansion coeff. N. Thon

Sokolov, V.A.

**Thermodynamics of Phase Transitions of the Second Order.** V. A. Sokolov (*Doklady Akad. Nauk S.S.S.R.*, 1951, 77, (5), 843-846). [In Russian]. The theory of phase transitions of the second order is characterized by the introduction into the equation for thermodynamic potential ( $\zeta$ ) of an additional parameter  $\kappa$ , whose magnitude is determined by the additional internal energy  $A_{\kappa}$  (zero or very small for one phase), heat capacity, expansion, &c. Then  $A_{\kappa} = \alpha \kappa^2$  and the internal energy  $E = U(T, v, \kappa) + \alpha \kappa^2$ , where  $U(T, v, \kappa)$  is the vibrational part, whilst  $\zeta = E - TS - \alpha \kappa^2 = \psi - \alpha \kappa^2$  and  $d\zeta = -SdT - pdv - 2\alpha \kappa d\kappa$ . At equilibrium (min.  $\zeta$ ) and const.  $v$ ,  $2\alpha \kappa$  will be a function only of temp. Hence the additional heat capacity  $c_{\kappa} = 2\alpha T(\partial L/\partial T)_{\kappa}$ , and in the ideal case  $c_{\kappa}^{(ideal)} = 2\alpha L/LdT$ . Expressions are also given for the additional heat capacity at const. pressure:  $c_{p,\kappa} = T(\frac{\partial L}{\partial T})_{\kappa} - p(\frac{\partial L}{\partial p})_{\kappa}(\frac{\partial L}{\partial T})_{\kappa}$ , the additional pressure-coeff.:  $(\frac{\partial p}{\partial T})_{\kappa} = 2\alpha(\frac{\partial L}{\partial v})_{\kappa}(\frac{\partial L}{\partial T})_{\kappa}$ , and the additional compressibility:  $(\frac{\partial p}{\partial v})_{\kappa} = -2\alpha(\frac{\partial L}{\partial v})_{\kappa}^2$ . According to Bragg and Williams' theory of disordering (*Proc. Roy. Soc.*, 1934, [A], 145, 609; *M.A.*, 1, 348),  $A_{\kappa} = \frac{1}{2}NWF(1 - \xi^2)$ , where  $N$  is Avogadro's number,  $W$  the work for two atoms changing place, and  $\xi$  the degree of disorder. Hence for the general case  $c_{\kappa} = T \frac{NWF}{2} \frac{\xi^2}{1 - \xi^2} (\frac{d\xi}{dT})^2$  and for the ideal case  $c_{\kappa} = -\frac{NWF}{2} \xi \frac{d\xi}{dT}$  (the equation obtained by B. and W.). By means of the approximation  $\tanh^{-1}\xi \approx \xi$  (as in obtaining Curie's law for paramagnetics from Langevin's equation), S. derives the expression  $-\xi = \tanh(\frac{W}{2kT} T \frac{\xi^2}{1 - \xi^2} \frac{d\xi}{dT})$ , which in the ideal case reduces to B. and W.'s equation. Whereas B.

and W. obtained the value  $\frac{1}{2}R$  ( $R$  being the gas const.) for the limiting  $c_{\kappa}$  at the Curie point, S. shows that it is  $\infty$ , i.e. in the case of non-ideal disordering  $c_{\kappa}$  increases rapidly near the Curie point, as observed experimentally. If the parameter  $\xi = -\alpha/\beta$  (where  $\alpha$  and  $\beta$  are the coeff. in the resolution of the thermodynamic potential into a series:  $\Phi(\xi, p, T) = \Phi_0(p, T) + \alpha(p, T)\xi + \beta(p, T)\xi^2$ ) introduced by Landau and Lifshits (*"Statisticheskaya Fizika"*, 1940) be used, then the equation for  $c_{\kappa}$  becomes  $c_{\kappa} = \frac{T}{\beta} (\frac{\partial \alpha}{\partial T})^2$  as obtained by L.

and L. An expression for the heat capacity near the Curie point similar to that obtained by L. and L. can also be deduced. This scheme of reasoning can be applied to orientation melting and to the consideration of anomalous heat capacity in pseudo-binary systems. The explanation of Smits' phase transitions of the second order is obtained as a special case; they may be divided into two classes (cf. also S., *Doklady Akad. Nauk S.S.S.R.*, 1949, 65, 883): (1) non-variant, which take place at the transition point, after the state of one of the phases had gradually changed on approaching the point, consequent upon changes in  $\kappa$ , and (2) monovariant. The first represents Semchenko's false Curie point (*Zhur. Fiz. Khim.*, 1947, 21, 1461); the second, the true Curie point. —G. V. F. T

Sokolov V. A.

Thermochemical investigation of isomeric compounds of  
platinum. I. I. Chernyav, V. A. Palkin, and V. A.  
Sokolov. Bull. Acad. Sci. U.S.S.R., Div. Chem. Sci.  
1953, 103-7 (Engl. translation).—See C.A. 48, 3782b.  
H. L. H.

SOKOLOV, V. A.

Chemical Abst.  
Vol. 48  
Apr. 10, 1954  
General and Physical Chemistry

4  
(3)  
Thermochemical investigation of isomeric compounds of platinum. I. I. Chernyav, V. A. Talkin, and V. A. Sokolov. *Izvest. Akad. Nauk S.S.S.R., Otdel. Khim. Nauk*, 1953, 215-9. — The heats of reaction ( $q$ ) of  $\text{cis-Pt}(\text{NH}_3)_2\text{Cl}_2$  (I),  $\text{trans-Pt}(\text{NH}_3)_2\text{Cl}_2$  (II),  $[\text{Pt}(\text{NH}_3)_2\text{Cl}][\text{Pt}(\text{NH}_3)_2\text{Cl}_2]$  (III),  $[\text{Pt}(\text{NH}_3)_2\text{Cl}][\text{PtCl}_4]$  (IV), and  $[\text{Pt}(\text{NH}_3)_2][\text{Pt}(\text{NH}_3)_2\text{Cl}_2]$  (V) with aq.  $\text{NH}_3$  were measured with an elaborate, illustrated, and fully described resistance thermometer sensitive to about  $0.00005^\circ$ . The values of  $q$  for I-V are 62.4, 53.2, 61.8, 54.9, and 59.5 cal./g., resp. Calcd. heat values for the isomeric transition I  $\rightarrow$  II and the depolymerizations III  $\rightarrow$  II, IV  $\rightarrow$  II, and V  $\rightarrow$  II are  $3.0 \pm 0.2$ ,  $5.8 \pm 0.3$ ,  $2.5 \pm 0.3$ , and  $6.6 \pm 1.2$  kcal./mole, resp. J. W. Loweberg, Jr.

MF  
a 27-54

Inst. Gen. + Inorg. Chem. in Kurnakov, AS USSR

ZHUKHOVITSKIY, A.A.; TURKEL'TAUB, N.M.; SOKOLOV, V.A.

Theory of chromathermography. Doklady Akad. Nauk S.S.S.R. 88, 859-62 '53.  
(CA 47 no.22:11882 '53) (MIRA 6:2)

SOKOLOV, V.A., red.

[Methods of measuring temperature; a collection of articles]

Metody izmereniia temperatury; sbornik statei pod red. V.A.

Sokolova. Moskva, Izd-vo inostr.lit-ry, 1954. 1 v.

(MIRA 13:3)

(Thermometry)

Sokolov, V.A.

USSR

V. Analysis of heat capacity of potassium nitrate close to the melting point. V. A. Sokolov, V. A. Palkin, and N. E. Slonitskiy. *Izvest. Sektora Fiz. Khim. Akad. Nauk S.S.S.R.* 25, 134-6 (1954); *Georg. Khim. Akad. Nauk S.S.S.R.* 25, 134-6 (1954); *cf. C.A.* 46, 6a. When the heat capacity of  $\text{KNO}_3$  was plotted against temp. in the range 300-330°, a max. was found at approx. 319.5°. The  $\text{KNO}_3$  contained approx. 0.01% Ca and 0.001% of other impurities. App. was described earlier by S. (see. cit.). All results of 4 series of tests were within 0.5% of the value being detd. E. Mayerle.

600

*Sm...*

SOKOLOV, V. A.

Calorimeter for the determination of small thermal effects of slow chemical reactions. I. I. Chernyav, V. A. Sokolov, and V. A. Farkin. *Izvest. Sibirsk. Plaziny i Bolog. Metal., Inst. Obshchei i Neorg. Khim., Akad. Nauk S.S.S.R.* 28, 142-60 (1954).—A calorimeter for the detn. of heats of reaction of  $Pt(NH_3)_4Cl_2$  isomers with solns. of  $NH_3$  at  $70^\circ$  is described. The thermometer of the calorimeter has an accuracy of  $5 \times 10^{-4}^\circ$  and the instrument is sensitive to 0.015 cal. The heat of reaction of  $Pt(NH_3)_4Cl_2$  with a 9.4% soln. of  $NH_3$  at  $70^\circ$  is  $20.8 \pm 0.2$  kcal./mol. for the cis-isomer and  $17.8 \pm 0.2$  kcal./mol. for the trans-isomer. H. W. Rathmann



24.1 112.77

Specific heat and heat of fusion of sodium nitrate. V. A. Sokolov and N. E. Schmidt. Izvest. Sektora Fiz.-Khim.

Anal., Inst. Obshchei i Neorg. Khim., Akad. Nauk S.S.S.R.  
26, 123-31(1955).— $C_p$  of  $\text{NaNO}_3$  in the interval 40–337° was detd. and is presented in a graph. The temp. of fusion was found to be  $300.4 \pm 0.1^\circ$  and  $\Delta H_f = 3606 \pm 8$  cal./mol. Thermodynamic functions  $H$ ,  $S$ , and  $H - TS$  were computed.  
V. N. Rednarski

Send ① [Signature]

USSR/ Physical Chemistry - Thermodynamics. Thermochemistry. Equilibrium.  
Physicochemical analysis. Phase transitions

B-8

Abs Jour : Referat Zhur - Khimiya, No 4, 1957, 11137

Author : Sokolov V.A., Shmidt N.Ye.

Inst : Institute of General and Inorganic Chemistry, Academy of Sciences USSR

Title : Heat Capacity, Heat of Transformation and Heat of Fusion of Potassium Nitrate

Orig Pub : Izv. Sektora fiz.-khim. analiza IONKh AN SSSR, 1956, 27, 217-222

Abstract : By the method of periodic heating (RZhKhim, 1956, 6358) in the interval 32-394° C, heat capacity  $C_p$  of  $KNO_3$  was determined (130 points). Determined were temperature of transformation (127.9 - 0.1°C), heat of transformation (1218 - 5 cal/mole), point of fusion (334.3 ± 0.1°C) and heat of fusion (2300 ± 5 cal/mole). In the interval 25 - 670°K were calculated and tabulated the values of enthalpy, entropy and isobaric potential;  $S_{298.16} = 31.72$  entropy units.

Card 1/1

ANDISOV, Viktor Yakovlevich; SOKOLOV, V.A., doktor khim.nauk, otv.red.;  
KOTOV, I.I., red.izd-va; ZELENIKOVA, Ye.V., tekhn.red.

[Geometry of chemical diagrams of binary systems; conversion of  
coordinates on diagrams of binary systems] Geometriia khimi-  
cheskikh diagramm dvoynykh sistem; o preobrazovanii koordinat  
na diagrammakh dvoynykh sistem. Moskva, Izd-vo Akad.nauk SSSR,  
1959. 184 p. (MIRA 12:6)

(Systems (Chemistry))

L'VOV, Sergey Vasil'yevich; SOKOLOV, V.A., doktor khim.nauk, otv.red.;  
BANKVITSER, A.L., red.izd-vb; ASTAF'YEVA, G.A., tekhn.red.

[Certain problems in the rectification of binary and multicomponent mixtures.] Nekotorye voprosy rektifikatsii binarnykh i mnogekomponentnykh smesei. Moskva, Izd-vo Akad.nauk SSSR, 1960. 165 p.

(MIRA 13:3)

(Distillation, Fractional)

BANASHEK, Ye.I.; RUBINCHIK, S.M.; SOKOLOV, V.A.; EL'KIND, S.A.

System for thermostatic control of a furnace up to 1,400° C. Prib.  
i tekhn.eksp. no.2:156-158 M-r-Ap '60. (MIRA 13:7)

1. Institut obshchey i neorganicheskoy khimii AN SSSR.  
(Thermostat)

*Sokolov, V. A.*

S/078/60/005/008/001/018  
B004/B052

AUTHORS: Shmidt, N. Ye., Sokolov, V. A.

TITLE: Adiabatic Calorimeter for the Determination of the Actual  
Specific Heats of Substances of Low Thermal Conductivity  
in the Range of 30-750°. The Specific Heat of Corundum

PERIODICAL: Zhurnal neorganicheskoy khimii, 1960, Vol. 5, No. 8,  
pp. 1641-1649

TEXT: The authors based their work upon a paper (Ref. 1) by the author mentioned second who in 1948 designed a calorimeter for temperatures ranging between 30 and 400° C. This calorimeter could not be used for higher temperatures, since its heat exchange then became too high. The authors discuss the drop in temperature in substances of low thermal conductivity, and describe a newly designed calorimeter for temperatures between 25° and 750° C. The drop in temperature is kept low by way of the small volume of the apparatus, and the low loss of heat along the conducting wires. Fig. 1 shows the cross section of an apparatus consisting of the actual calorimeter, three shieldings for guaranteeing the adiabatic

Card 1/4

Adiabatic Calorimeter for the Determination of  
the Actual Specific Heats of Substances of Low  
Thermal Conductivity in the Range of 30-750°.  
The Specific Heat of Corundum

S/078/60/005/008/001/018  
B004/B052

condition, and a number of insulating covers made of stainless steel and aluminum. The actual calorimeter is shown in Fig. 2; as compared to that of 1948, it has remained unchanged. Heater and resistance thermometer are similar to P. G. Strelkov's standard thermometer (Ref. 24). The three shieldings are described in detail. They are cylindrical and contain heating elements made of nichrome bands (Fig. 5) wound round a quartz frame work; they are regulated by means of PtRh (10%) - AuPd (40%) thermocouples. The shielding layers consist of 0.1 mm platinum sheets, since silver proved to be unstable at temperatures over 720°C (Fig. 3), and ЭЯ ИТ (EYaIT) steel delays the temperature balance (Fig. 4). Fig. 6 shows the circuit for the temperature regulation of the shieldings. The temperature is taken by means of a platinum resistance thermometer and a КЛ-48 (KL-48) potentiometer. The platinum resistance thermometer was calibrated at the triple point of water, the boiling point of water, and, contrasting with the international scale, at the melting point of antimony instead of the boiling point of sulfur. This deviation was compensated by comparison with the

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.. Card 2/4

Adiabatic Calorimeter for the Determination of  
the Actual Specific Heats of Substances of Low  
Thermal Conductivity in the Range of 30-750°.  
The Specific Heat of Corundum

S/078/60/005/008/001/018  
BC04/B052

standard resistance thermometer No. 124 of the laboratory. After the determination of the heat value of the calorimeter, the stability of the thermometer indications was checked by measurement of the transformation point of  $\text{Na}_2\text{SO}_4 \cdot 10\text{H}_2\text{O}$  (Table 1), and transformation and melting points of  $\text{KNO}_3$ . The electric work was determined by means of a Raps compensator of the workshops of the Vsesoyuznyy institut mer i standartov (All-Union Institute of Measures and Standards), and a second counter. In the range of 300° to 1000° K, the heat value of the calorimeter fluctuates by 5% (Fig. 7). The temperature drop in the calorimeter was found to be at the transformation point 117.9°C of  $\text{KNO}_3$ . In slow processes, the temperature threshold is not reached. The latter was computed according to M. A. Reshetnikov's equation (Ref. 29), the applicability of which has been examined in a previous paper (Ref. 22). Finally, the determination of the specific heat of two samples of synthetic corundum is described, and their spectroscopic data determined by V. L. Ginzburg, are given. Table 2 shows that the scattering of the measured values does not exceed  $\pm 0.5\%$ , and the values

Card 3/4



Adiabatic Calorimeter for the Determination of  
the Actual Specific Heats of Substances of Low  
Thermal Conductivity in the Range of 30-750°.  
The Specific Heat of Corundum

S/078/60/005/008/001/018  
B004/B052

are in good agreement with the published data; at 1000°K, however, they  
are higher than those of the US National Bureau of Standards (Fig. 8)  
by approximately 0.4%. There are 8 figures, 2 tables, and 31 references:  
14 Soviet, 7 US, 5 British, 1 Canadian, and 4 German. ✓

SUBMITTED: February 12, 1960

Card 4/4

SOKOLOVA, I.D.; SOKOLOV, V.A.

Surface tension of fused salts. Part 1: Methods of measurement.  
Zhur.fiz.khim. 34 no.9:1987-1990 S '60. (MIRA 13:9)

1. Akademiya nauk SSSR, Institut obshchey i neorganicheskoy khimii  
im. N.S.Kurnakova.  
(Salts) (Surface tension)

SHMILT, N.Ye.; SOKOLOV, V.A.

Heat capacity and transformations of sodium sulfate. Zhur.neorg.-  
khim. 6 no.12:2613-2622 D '61. (MIRA 14:12)  
(Sodium sulfate)

TOLSTOY, N.A.; SOKOLOV, V.A.

Luminescence of thallium chloride single crystals. Izv. AN SSSR. Fiz.  
25 no.3:375-376 Mar '61. (MIA 10:4)  
(Thallium chloride-crystals--Spectra)

24.3500

38379

S/070/62/007/003/006/026  
E132/E460

AUTHOR: Sokolov, V.A., Tolstoy, N.A.

TITLE: Single crystals of the halides of thallium and  
certain of their properties

PERIODICAL: Kristallografiya, v.7, no.3, 1962, 389-393

TEXT: Crystals of specially pure TlCl and TlBr were grown by D. Stockbarger's method (J. Opt. Soc. Amer., v.39, 1949, 731). The crystals were grown in sealed pyrex glass ampules, the materials having been outgassed under vacuum at 170 to 200°C for 4 to 5 hours. A diagram of the apparatus is given. Their luminescence properties were studied. It was found that short wavelength luminescence is a property of these compounds in the crystalline state when the number of defects is a minimum. Long wavelength luminescence is connected with the presence of mechanical defects and an increase at the long wavelength end of the spectrum is accompanied by a decrease at the other end. The luminescence was measured at liquid nitrogen temperature after annealing at 250°C. There are 6 figures. f

SUBMITTED: June 9, 1961  
Card 1/1

S/076/62/036/003/010/011  
B119/B108

AUTHOR: Sokolov, V. A.

TITLE: Viktor Yakovlevich Anosov (On his 70th birthday)

PERIODICAL: Zhurnal fizicheskoy khimii, v. 36, no. 3, 1962, 665

TEXT: V. Ya. Anosov was born in Saratov on November 10, 1891, and had studied at Peterburgskiy gornyy institut (Peterburg Mining Institute) and the khimicheskoye otdeleniye fiziko-matematicheskogo fakul'teta Saratovskogo universiteta (Chemical Department of the Division of Physics and Mathematics of Saratov University) with Ye. S. Fedorov, I. V. Shreder, N. S. Kurnakov, and P. P. Veymarn. In 1918, he had started his pedagogical activity at the schools of higher education in Saratov; in 1929 - 32, he was a professor at Perm' University, until 1935 at the Pedagogicheskiy institut im. Gertsena (Pedagogical Institute imeni Gertsen) in Leningrad, until 1938 at the Moskovskiy institut stali (Moscow Steel Institute), and until 1941 at the Moskovskiy universitet im. Lomonosova (Moscow University imeni Lomonosov). From 1933, he worked at the Laboratoriya obshchey khimii Akademii nauk (Laboratory of General Chemistry of the Academy of

Card 1/2

GAYDIN, A. M., RUBINOVICH, S. M., DUBOV, V. I.

Heats of solution of ferrocenes. Zhur. neorg. khim. 5 no 12:464-  
2816 1963. 1964 17:19

1. Institut khimicheskoy i neorganicheskoy khimii Akad. Nauk SSSR.

SOKOLOV, V.A.; BANASHEK, Ye.I.; RUBINCHIK, S.M.

Enthalpy of corundum in the 678 - 1330°K temperature range. Zhur.  
neorg.khim. 8 no.9:2017-2020 S '63. (MIRA 16:10)

1. Institut obshchey i neorganicheskoy khimii imeni N.S.Kurnakova  
AN SSSR.



SKURATOV, Sergey Mikhaylovich; KOLESOV, Viktor Petrovich;  
VOROB'YEV, Adol'f Fedorovich; SOKOLOV, V.A., nauchn. red.;  
KOROTISOVA, N.A., red.

[Thermochemistry] Termokhimiia. Moskva, Izd-vo Mosk. univ.  
Pt.1. [General data on thermometry and calorimetry] Obshchie  
svedeniia o termometrii i kalorimetrii. 1964. 301 p.  
(MIRA 17:5)

SOKOLOV, V.A.; SHANPATAYA, G.A.

Calorimeter of small volume for determining the heat capacity  
at low temperatures. Heat capacity of potassium chloride.  
Zhur. neorg. khim. 9 no.7:1542-1546 J1 '64. (MIRA 17:9)

1. Institut obshchey i neorganicheskoy khimii imeni N.S.  
Kurnakova AN SSSR.

SOKOLOV, V.A.; LEVIN, V.I.

Separation by extraction of small amounts of tellurium and  
molybdenum. Zhur. neorg. khim. 9 no.3:742-745 Mr '64.  
(MIRA 17:3)

BA-NASHEK, Ye.I.; SOKOLOV, V.A.; RUBINCHIK, S.M.; FOMIN, A.I.

Measurement of corundum enthalpy at temperatures from 1290 to 1673°K.  
Izv. AN SSSR. Neorg. mat. 1 no.5:698-701 My '65. (MIRA 18:10)

1. Institut obshchey i neorganicheskoy khimii imeni Kurnakova AN  
SSSR.

KHROMENKOV, I.G.; DEHAGATSPANYAN, R.V.; SOKOLOV, V.A.; KOROLEV, B.M.;  
ZETKIN, V.I.

Structure formation in radiation sulfochlorinated polyethylene  
and its solutions. Vysokom.sped. 7 no.10:1776-1778 O '65.  
(MIRA 18:11)

SHARPATAYA, G.A.; SOKOLOV, V.A.

Specific heat of palladium tetrammine chloride over a temperature  
range of 105 to 290°K, Zhur.neorg.khim. 10 no.4:992-993 Ap '65.  
(MIRA 18:6)

L 4446-66 EWT(1)/EWT(m)/EWP(t)/EWP(b) IJP(c) JD  
 ACCESSION NR: AP5017897 UR/0051/65/019/001/0097/0101  
 535.377

AUTHORS: Sokolov, V. A. 44, 55 Tolstoy, N. A. 44, 55

TITLE: Thermal afterglow and thermostimulated current in TlCl single crystals 48 B

SOURCE: Optika i spektroskopiya, v. 19, no. 1, 1965, 97-101

TOPIC TAGS: luminescence, thallium compound, thermoluminescence, crystal lattice defect, optic transition

ABSTRACT: This is a continuation of earlier work (Sb. 'Fizika shchelochno galoidnykh kristallov. (II Vses. soveshch.) [Collection Physics of alkali halide crystals, Second All-Union Conference] p. 411, Riga, 1962), where it was shown that luminescence of thallium chloride undergoes strong temperature quenching when heated above 160C. To determine the level spectrum in the forbidden band and its variations in single crystals of thallium chlorides from different sources, which have different luminescence spectra, the authors in-

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L 4446-66

ACCESSION NR: AP5017897

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vestigated the thermoluminescence and at the same time also the thermostimulated current (TSC) in the same single crystal specimens of  $\text{TlCl}$ . A block diagram of the experimental setup for the simultaneous measurement is shown in Fig. 1 of the Enclosure. The crystals were excited at  $-190^\circ\text{C}$  with the 365-nm mercury line for five minutes, which was adequate for an equilibrium population of the capture levels. All the investigated single-crystal  $\text{TlCl}$  specimens displayed thermal afterglow (TA) and TSC. Specimens from different lots had similar shapes of TA and TSC curves, but different luminescence spectra. Different specimens cut from the same crystal (with similar luminescence spectra) may have different ratios of the peak maxima of the TA and TSC curves. The peaks of the TA and TSC of all the  $\text{TlCl}$  specimens lie within narrow temperature ranges. The net result is that the capture levels of the carriers in single  $\text{TlCl}$  crystals are connected with the intrinsic defects of the crystal lattice, and that the luminescence mechanism of this sort, when excited by the band-band transition, is similar to the Schoen-Klasens mechanism. Orig. art. has: 5 figures and 1 table.

Card 2/4



L 4446-66

ACCESSION NR: AP5017897

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ASSOCIATION: None

SUBMITTED: 28Apr64

ENCL: 01

SUB CODE: OP, SS

NR REF SOV: 013

OTHER: 010

Card 3/4

L 4446-66

ACCESSION NR: AP5017897

ENCLOSURE: 01

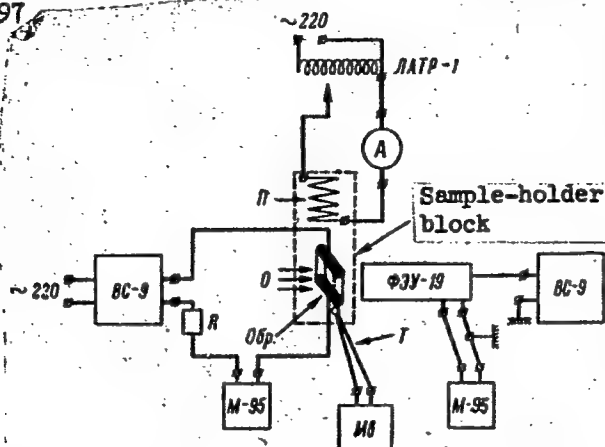


Fig. 1. Block diagram of setup for simultaneous measurement of thermoluminescence and thermostimulated current.

T - Thermocouple, O - direction of exciting light, П - oven of sample holder, R - 15 Meg resistor, odp - sample, ФЭУ - photomultiplier, MB - millivoltmeter, M-95 - microammeter

Card 4/4

SOKOLOV, V.A.; KOLESOV, V.P.; VOROB'YEV, A.F.

Recommendations regarding the publication of results of calorimetric  
measurements. Zhur. fiz. khim. 39 no.5:1298-1299 My '65.  
(MIRA 18:8)

SILAYEV, M. P.

Changes in the carbohydrate-phosphorus metabolism in muscle tissue under the influence of gamma irradiation. Radiobiologiya 2 no.3:387-389 '62. (MIRA 15:7)

1. Moskovskiy tekhnologicheskoy institut myasnoy i molochnoy promyshlennosti.

(GAMMA RAYS—PHYSIOLOGICAL EFFECT)  
(CARBOHYDRATE METABOLISM)  
(PHOSPHORUS METABOLISM)

SILAYEV, M.P.

Effect of the preslaughter treatment of animals on the hydrophilic properties of meat. Kons.i ov.prom. 17 no.6:24-25 Je '62.

(MIRA 15:5)

1. Tsentral'nyy nauchno-issledovatel'skiy institut konservnoy i ovoshchesushil'noy promyshlennosti.

(Meat-Preservation)

KUZIN, A.M.; SILAYEV, M.P.

New possibility for using ionizing radiation in the meat  
industry. Radiobiologiya 3 no.4:545-548 '63.

(MIRA 17:2)

1. Moskovskiy tekhnologicheskoy institut myasnoy i molochnoy  
promyshlennosti.

SOKOLOV, V.A.

Conditioned reflex upon stimulation of the air bladder in fish. Trudy  
Inst.fiziol. no.2:352-363 '53. (MLRA 7:5)

1. Laboratoriya interotseptivnykh uslovnykh reflektsov Instituta  
fiziologii im. I.P.Pavlova Akademii nauk SSSR i Laboratoriya fiziologii  
vyashey nervnoy deyatel'nosti Leningradskogo Gosudarstvennogo ordena  
Lenina universiteta im. A.A.Zhdanova (zaveduyushchiy - E.Sh.Ayrapet'yants).  
(Conditioned response) (Fishes--Physiology)

SOKOLOV, V. A.

SOKOLOV, V. A.--"The Characteristics of the Internal Analysor of Fish." Leningrad Order of Lenin State U imeni A. A. Zhdanov. Chair of the Physiology of Higher Nervous Activity. Leningrad, 1955. (Dissertation for the Degree of Candidate in Biological Science).

SO Krizhanay letopis'  
No 2, 1956.



SOKOLOV, V.A.

Phasic conditions during the development of differentiation in  
fishes. Uch. zap. LGU no.239:121-126 '58. (MIRA 12:1)

1.Laboratoriya fiziologii vysshey nervnoy deyatel'nosti Fizio-  
logicheskogo instituta Leningradskogo gosudarstvennogo universiteta.  
(CONDITIONED RESPONSE)

SOKOLOV, V.A.

Conditioned reflex in the gastropod mollusk *Physa acuta*.

Vest.LGU 14 no.9:82-86 '59.

(MIRA 12:5)

(CONDITIONED RESPONSE) (MOLLUSKS)

SOKOLOV, V.A.

Mechanism of buoyancy variation in fishes [with summary in English].  
Fiziol.zhur. 45 no.2:177-185 F '59. (MIRA 12:3)

1. From the laboratory of higher nervous system physiology, Leningrad  
University, Leningrad.

(FISH.

repeat title (Rus))

SOKOLOV, V.A.

Functional connections of the swim bladder in fishes with the  
higher sections of the brain. Vop. sr.v. fiziol. anal. no. 1:182-  
189 '60. (MIRA 14:4)

1. The Higher Nervous Activity Physiological Laboratory, University  
of Leningrad.

(AIR BLADDER (IN FISHES)) (CONDITIONED RESPONSE)  
(BRAIN)

SOKOLOV, V.A.

Unconditioned responses of crawfish to sodium chloride solutions.  
Vop. srav. fiziol. anal. no. 1:190-195 '60. (MIRA 14:4)

1. The Higher Nervous Activity Physiological Laboratory, University  
of Leningrad.

(REFLEXES) (SALT--PHYSIOLOGICAL EFFECT)  
(ORIENTATION)

SOKOL V, V.A.,

Conditioned response to light stimuli in the starfish *Asterias*  
rubens L. Trudy MBI no.2:236-244 '60. (MIRA 14:2)  
(Starfishes) (Conditioned response)

SOKOLOV, V.A.

Tactile conditioned reflex in the starfish *Asterias rubens* L.  
Trudy MMBI no.3:49-54 '61. (MITA 15:3)

1. Laboratoriya sravnitel'noy fiziologii (zav.-E.Sh.Ayrapet'yants)  
Murmanskogo morskogo biologicheskogo instituta.  
(Starfishes)(Conditioned response)

SOKOLOV, V.A.; ASTAF'YEVA, L.A.

Destruction of gastric tissues in the starfish *Asterias rubens* L.  
as a response to changes in the environmental conditions. Trudy  
MMBI no.3:55-60 '61. (MIRA 15:3)

1. Laboratoriya sravnitel'noy fiziologii (zav. -E.Sh.Ayrapet'yants)  
Murmanskogo morskogo biologicheskogo instituta.  
(Starfishes)(Temperature--Physiological effect)  
(Digestive organs--Echinodermata)



SOKOLOV, V.A.

Races of young herring in Aniva Gulf. Vop. ikht. 2 no.1:73-78  
'62. (MIRA 15:3)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut morskogo  
rybnogo khozyaystva i okeanografii (VNIRO), Moskva.  
(ANIVA GULF---HERRING)

SOKOLOV, V. A.

Origin of the two concentration areas of the Sakhalin-Hokkaido  
herring fry. Vop. ikht. 2 no.3:473-479 '62. (MIRA 15:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut morskogo  
rybnogo khozyaystva i okeanografii - VNIRO, Moskva.

(Sakhalin—Herring)  
(Hokkaido Island—Herring)

SOKOLOV, V.A., inzh.; UZIYENKO, A.M., inzh.

Increasing the durability of back-up rolls on four-high mills.  
Stal' 22 no.8:737-739 Ag '62. (MIRA 15:7)

1. Magnitogorskiy metallurgicheskiy kombinat.  
(Rolls (Iron mills))

RYABCHIKOV, F.D., inzh.; KUSTOBAYEV, G.G., inzh.; SOKOLOV, V.A., inzh.;  
KHISAMOV, F.N., inzh.

Accelerating the cooling of sheet steel in bell furnaces.  
Stal' 22 no.8:748-749 Ag '62. (MIRA 15:7)

1. Magnitogorskiy metallurgicheskiy kombinat.  
(Furnaces, Heat-treating)

SOKOLOV, V.A., inzh.; LEVINA, G.G., inzh.; Prinimali uchastiye: DUKHIN,  
I.S.; KOLOV, M.I.; SOSNOVSKAYA, Z.N.

Increasing the durability of steel rolls for strip mills.  
Stal' 22 no.9:821-823 S '62. (MIRA 15:11)

1. Magnitogorskiy metallurgicheskiy kombinat.  
(Rolls (Iron mills)) (Steel--Heat treatment)

SOKOLOV, V.A.; NOVIKOV, A.N.; MOROZOV, P.M.

Surfacing rolls with hard alloys. Metallurg 8 no.8:29 Ag  
'63. (MIRA 16:10)

1. Magnitogorskiy metallurgicheskiy kombinat.

L 47167-66 EWT(d)/EWT(m)/EWP(v)/EWP(t)/ETI/EWP(k)/EWP(h)/EWP(l) IJP(c)

ACC NR: AR6000437

SOURCE CODE: UR/0137/65/000/009/D005/D005

JD/HW

AUTHORS: Vysokovskiy, S. N.; Rannev, G. G.; Sokolov, V. A.; Andreyuk, L. V.; Merkulova, R. M.

44  
B

TITLE: Energy and temperature parameters for rolling of thin sheets from different steels and alloys on stand "1500"

SOURCE: Ref. zh. Metallurgiya, Abs. 9D33

REF SOURCE: Sb. Teoriya i praktika metallurgii. Vyp. 7. Chelyabinsk, 1964, 90-100

TOPIC TAGS: metal rolling, metallurgic machinery, sheet metal, <sup>test</sup>stand / <sup>test</sup>1500<sup>stand</sup>

ABSTRACT: The energy and temperature parameters during hot rolling of sheets were investigated on a reversible 4-roller stand 1500. The metal pressure on the rollers, armature current, excitation current, mean square current of the motor, velocity of revolution of rollers, displacements of pressure bolts, thickness of sheets, and their temperature were determined. The results of the measurements are tabulated. Calculated results are compared with experimental data. Investigations have shown that it is possible in some cases to decrease the number of rolling operations without exceeding the maximum permissible pressure. In other cases, the redistribution of compressions between passages permitted a more uniform stand loading without exceeding the maximum permissible metal pressure on the rollers. 10 illustrations, 1 table. Bibliography of 5 citations. L. Kochenova [Translation of abstract]

SUB CODE: 13, 11

Card 1/1 *eqts*

UDC: 621.771.001

1st and 2nd Orders

PROCESSES AND PROPERTIES

7

SOKOLOV, V. A.

Microstructure and genesis of the phosphorites of the Kara-Tau Divide. V. A. Sokolov and I. I. Mashkara. Soviet Geol. 8, No. 7, 90-3(1938).—Analytical data are given for several phosphorites in U. S. S. R. and in the Kara-Tau. The latter with  $P_2O_5$  33-34, CaO 48-50,  $SiO_2$  4 and MgO 3.5%, show close relation to certain African (Tunisian) Permian, but not to other Soviet phosphorites. H. Rathmann

ASAC-5LA METALLURGICAL LITERATURE CLASSIFICATION

130th Storage

140th

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850th

860th

870th

880th

890th

900th

910th

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930th

940th

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960th

970th

980th

990th

1000th



SOKOLOV V.A.

Mbr. Institute of Geological Sciences, Kazakh SSR Acad. Sci., Alma-Ata, 1947

"The Cambrian 'Vanadium' Sea," Dok. AN, 56, No.1, 1947

BOGACHEV, V. A.

"Nature and Principal Groups of Sedimentary Rocks," Uch. zap. Kazansk. un-ta, 15, No 1, pp 11-13, 1954

The accepted division of sedimentary formations into clastogenic, chemogenic, and organogenic the author considers insufficient and proposed to distinguish the following principal groups and subgroups of sedimentary rocks: Of homogeneous genesis -- mechanical, chemical, and organic; of heterogeneous origin -- (1) bicomponent -- (a) chemi-  
comechanical, (b) biochemical; (2) tricomponent. (RzhGeol, No 4, 1955)

Sov. No. 681, 7 Oct 55

SOKOLOV, Vladimir Alekseyevich; PANKRASHOV, A., red.; POD"YEL'SKAYA, K.,  
tekh.n.red.

[Studies of Karelian limestones, dolomites, and marbles] Ocherki  
o karel'skikh izvestniakakh, dolomitakh i mramore. Petrozavodsk,  
Gos.izd-vo Karelo-Finskoi SSR, 1955. 53 p.

(MIRA 13:11)

(Karelia--Limestone)

SOKOLOV, V.A.

Origin of the Proterozoic dolomites of the Lake Onega region  
in Karelia. Dokl.AN SSSR 103 no.6:1089-1091 Ag '55. (MLRA 9:1)

1.Karelo-Finskiy filial Akademii nauk SSSR. Predstavleno akademikom  
N.M.Strakhovym.  
(Onega, Lake--Dolomite)